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CBMS as a targeting tool for poverty reduction programs: experience from Indonesia*

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Targeting is one of the most crucial aspects in a poverty reduction program. Without an accurate targeting method, it is very likely for the program to experience widespread leakage where the beneficiaries turn out to be non-poor individuals and undercoverage where the program cannot reach every poor individual.[1] This means the program would not be effective in reducing poverty.

On the other hand, while targeting is very critical, it is important to keep the cost of identifying the beneficiaries small relative to the program's benefits. Moreover, one should acknowledge that it is impossible to eliminate leakage and undercoverage. Therefore, the ideal targeting scheme in a poverty reduction program is one that is relatively affordable and sufficiently accurate.

In Indonesia, the national government allocates large amount of funds for its poverty reduction and assistance for the poor programs. It spent around US$2.5 billion in 2006, with similar amount budgeted for 2007. The benefits that the poor receive are numerous: subsidized rice, school scholarship, free healthcare and direct cash transfer. In addition to the benefits provided by the national government, district governments also allocate a substantial share of their budgets for similar programs. Looking at the kind of benefits that the poor receive, there is a very large incentive to be considered as poor in Indonesia. This is especially true for non-poor families whose level of welfare is only slightly above the poor.

Despite the large amount of money for the programs, targeting of these programs has traditionally been based on weak, albeit relatively, costly methodologies. Two methodologies that are used to identify poor families are proxy

< 2

Inside

* The contents of this article are taken mainly from two research reports: Akhmadi, Daniel Suryadarma, Hastuti, and Rizki Fillaili. 2006. "Verification of the Community-Based Monitoring System"; and Suryadarma, Daniel, Akhmadi, Hastuti, and Nina Toyamah. 2005. "Objective Measures of Family Welfare for Individual Targeting: Results from Pilot Project on Community-Based Monitoring System in Indonesia." presented in the June 2006 PEP meeting in Ethiopia and in the November 2006 CBMS Network Conference in the Philippines, respectively.

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[1] This paper does not address the theory of targeting. See, for example, Sumarto, Sudarno, and Asep Suryahadi. 2001. "Principles and Approaches to Targeting: With Reference to the Indonesian Social Safety Net Programs." SMERU Working Paper. SMERU Research Institute, Jakarta.

means testing for the cash transfer program and simple checklist for the other programs. These methodologies have two main weak points. One, the criteria used to identify poor families are uniform for large areas, district-level for the former program and national-level for the latter. This means that they are not sensitive to local poverty conditions. And two, the criteria are determined prior to the assessment, which means that everybody could tailor his or her responses during the assessment to be considered poor. These points have reduced the impact of the programs. As an example, Sumarto and Suryahadi (2001) estimated that 75 percent of the subsidized rice program was received by non-poor families while 50 percent of poor families did not benefit from it.

Given the importance of finding an affordable and reliable targeting system, the SMERU Research Institute pilot-tested in 2005 the use of the Community-Based Monitoring System (CBMS) for targeting purposes. This article provides an overview of the system and its results.

CBMS design

The CBMS in Indonesia eliminates the weaknesses of the currently employed targeting systems and builds on their strengths.

There are four characteristics of the CBMS design. One, it is a census of families, which means information of every family in the area is collected.

Two, it involves locals as enumerators. The advantages of involving locals include a more accurate description of families because it is harder to provide false information; respondents feel more comfortable talking to familiar people compared to enumerators from outside the area; data collection can be undertaken simultaneously in all areas; and the cost of collecting data is lower compared to using professional enumerators.

The challenges, meanwhile, consist of having to provide rigorous training because some enumerators have no experience in conducting data collection. Because the majority of the enumerators only have nine years of education, the system uses a simple questionnaire that is both comprehensive and easy to administer.

Three, the CBMS in Indonesia determines the poverty criteria using the collected information. Thus, there are no ex-ante poverty criteria, which will make it harder for those who only want to tailor their responses. The poverty criteria are determined using the Principal Components Analysis (PCA) method, a technique that identifies commonalities among variables and aggregates them (Zeller 2004).

The final characteristic is that the CBMS only measures relative poverty as opposed to absolute poverty that requires the use of a poverty line. Relative poverty measure informs a researcher only about the position of a family's welfare compared to other families in an area. Hence, the result of CBMS is a list that contains the rank of every family based on its welfare.

In conducting the pilot testing, SMERU collaborated with the National Family Planning Agency (BKKBN), a government agency tasked to monitor the implementation of the national family planning program. The main reason for SMERU to work with BKKBN is because BKKBN has staffs down to the village level and has been using locals to monitor the family planning activities. In the CBMS activity, the staffs at the village level serve as the supervisors during the data collection while most of the BKKBN enumerators were recruited as CBMS enumerators.

Welfare indicators

The initial welfare indicators consist of 63 variables from the following areas: demography, education, employment, food security, health, asset ownership and political security. A comprehensive list is needed because no welfare indicator is chosen ex-ante to be used for identifying poor families.

Fieldwork

CBMS is tested in four villages in two districts in Java: Kedondong and Jungpasir villages in the Demak district and Cibulakan and Parakantugu villages in the Cianjur district. More than half of the enumerators recruited had experience working with BKKBN. Each enumerator is responsible for collecting data in a hamlet which, on average, consists of 60-90 families. In terms of education level, most enumerators have nine years of education. Majority are female and the average age is 30 years.

Fieldwork began with the training of the enumerators in each village. The contents of the training include familiarization of the enumerators with the questionnaire, interview techniques and allocation of locations for each enumerator. Actual data collection, meanwhile, started the next day. The average data collection length is two weeks in each village.

Results

Kedondong

Out of the 63 welfare indicators, the most positive variable is owning a color television set while the most negative variable is having a female family head (Table 1). Of the 10 welfare indicators with the highest coefficients, either positive or negative, asset ownership

Table 1. Ten Highest-weighted Variables in the CBMS Pilot Project Villages

Jungpasir		Kedondong		Parakantugu		Cibulakan	
Variable	Weight	Variable	Weight	Variable	Weight	Variable	Weight
Own fan	0.27	Own color television	0.28	Own refrigerator	0.26	Own refrigerator	0.26
Own color television	0.26	Own fan	0.26	Own telephone	0.25	Own color television	0.26
Own DVD/VCD player	0.26	Own DVD/VCD player	0.25	Own savings	0.24	Own cellular phone	0.26
Own tape recorder	0.25	Family head is female	-0.23	Own fan	0.24	Own DVD/VCD player	0.23
Own motorcycle	0.25	Own motorcycle	0.23	Own satellite dish	0.24	Own fan	0.22
Own refrigerator	0.23	Own tape recorder	0.23	Own DVD/VCD player	0.24	Own savings	0.22
Own cellular phone	0.22	Family head is married	0.22	Own color television	0.24	Own tape recorder	0.20
Use private toilet	0.21	Own bicycle or boat	0.22	Own motorcycle	0.21	Use private toilet	0.20
Own other electronic device	0.19	Use private toilet	0.21	Family head education: elementary	-.020	Eat meat at least once a week	0.18
Own radio	0.19	Live in dirt floor house	0.21	Own tape recorder	0.19	Own motorcycle	0.18
Live in dirt floor house	0.19						

Source of data: CBMS survey

variables make up six of the 10 variables. This means that they best differentiate a family's welfare from the others. Meanwhile, the two variables with negative coefficients that make it to the list are living in a dirt-floored house and having a female family head. The richest family has a welfare score of 8.98 and the poorest family's score is -7.98. The richest family's head is a male with a university degree, the spouse also has a university degree, and the family is in the services sector. On the other hand, the poorest family is headed by a female who did not finish primary school and is unemployed.

Jungpasir

Nine of the highest indicators are asset ownership. This shows that asset ownership, especially ownership of electronic goods and motorcycles, acts as the best differentiator of welfare between families. Out of the eleven recorded indicators, only one is negative: living in a dirt-floored house.

Data show that there is a huge gap in terms of asset ownership between the rich and the poor. No family among the poorest 10 percent has a refrigerator, telephone, air conditioner, satellite dish, computer or car. Only a very small percentage of the poor have a fan, DVD/VCD player, color television set, radio, tape recorder or motorcycle. All these things are owned by most of the rich. The only assets that are widely owned by both the rich and poor are land and house. The poor might inherit these assets because these are the most prized assets in the village. However, the size of land/house owned by the rich is almost always much larger than that of the poor. Not many families own farm animals like cows and sheep, though, because Jungpasir is mainly a paddy farming village.

Cibulakan

Eight of the 10 welfare indicators are ownership variables, with the top five being ownership of electronic goods.

Based on the welfare score of each family, the 10 percent richest and poorest families can be isolated. There are very large gaps in asset ownership between the rich and the poor, with 13 assets (out of 19 recorded) owned by the rich but not by the poor. These include refrigerator, telephone, fan, air conditioner and satellite dish. Of the assets that some of the poor own, there is a notable gap in quantity and, most likely, quality.

Parakantugu

Like in Cibulakan, eight of the welfare indicators in Parakantugu are ownership variables. Two others are savings and education level of the family head. Refrigerator ownership is the variable with the highest coefficient while a family whose head only finished six years of education would most probably be poor.

Poor families only own black and white television sets and radio while rich families own every ownership variable. Both the rich and the poor own land and house. As is the case with the other villages, the house and land are usually inherited from their parents. With regard to marital status, 95.4 percent of rich families have a family head and a spouse while only 60.5 percent of poor families have that configuration.

Comparison of results

It is important to note that the most significant feature of the PCA technique

< 4

Research Results

People in the localities actively participate in the training on data collection activities (above) and validation activities (right).

is that it allows one to estimate locally specific poverty indicators. The results showed that while in general, asset ownership variables are the best predictors of poverty in each village, there are nonetheless discernible differences in the types of asset. For instance, the non-asset ownership variables that can predict poverty in Jungpasir are: the type of floor in the house and ownership of private toilet. Meanwhile, in Kedondong, although it is in the same district as Jungpasir, the sex of the family head and his/her marital status are the more important predictors.

There are also different significant poverty indicators in the villages in Cianjur. In Parakantugu, only one non-asset variable is in the top ten: education level of the family head while in Cibulakan, consumption pattern is included in the ten most important variables. The results have provided evidence that there are indeed different poverty indicators between villages. More importantly, these locally specific indicators can be unearthed using the methodology employed.

Verification of results

The last step that should be undertaken is to ensure that the results could accurately identify poor families. As such, the results were verified through focus group discussions (FGDs) with village residents in Cibulakan and Kedondong. The verification shows that around 70 -80 percent of families considered poor by CBMS are also considered poor by the FGD participants. This means that leakage would be reduced to merely 20-30 percent should CBMS be used as the targeting system compared to the 75 percent leakage that is currently being experienced in the subsidized rice program (Sumarto and Suryahadi 2001).

Conclusion

The purpose of this pilot project is to introduce a better poverty monitoring system to policymakers in Indonesia. Given Indonesia's size in terms of geography and population, it is important that the new monitoring system is easy to administer and can be expeditiously processed to provide the stakeholders with information on the poverty conditions of an area.

Since poverty is very much a local phenomenon, the new system that this project introduces is sensitive to local poverty conditions and ensures that local residents play a significant role in determining and analyzing their situation. Involvement of locals is important for another reason: the system can be conducted simultaneously in every village in Indonesia. This means that there is a possibility that data collection for the whole country can be finished in less than a month.

Since the main purpose is to identify poor families in a village, it is very important that the methodology used is able to do so. Since recording detailed family consumption expenditure is out of the question, the project employed 63 indicators as proxy for welfare. They range from asset ownership and health characteristics to political participation and access to information. These characteristics were processed using the PCA method and calculated to determine the welfare score of every family in the four villages. The results showed that asset ownership variables are the most significant welfare indicators although education, health and consumption patterns are also important.

In conclusion, the methodology used was successful in identifying the poor in every village. It was also demonstrated that given enough support and supervision, locals are able to conduct their own poverty monitoring.

PEP Network conference goes to Latin America

Development practitioners from all over the world will converge in Lima, Peru for the Sixth Poverty and Economic Policy (PEP) General Meeting. To be held on June 11-16, 2007, the meeting will bring together at least 100 researchers and various stakeholders from Asia, Africa and Latin America to share recent developments in methodologies on poverty analysis as well as to discuss new findings of various research initiatives of the three subnetworks of PEP, namely, Modeling and Policy Impact Analysis (MPIA), Poverty Monitoring and Measurement Analysis(PMMA), and the Community-Based Monitoring System (CBMS). Among the highlights of this year's conference will be a 2-day policy forum of PEP researchers with invited national and local planners and other development partners, particularly on issues and challenges relating to poverty, trade and the millennium development goals (MDGs).

For the CBMS sub-network, this year's meeting will be the venue to further advocate the potential usefulness of local monitoring systems such as the community-based monitoring system (CBMS) in scaling up poverty reduction and other development-related initiatives while improving governance in developing countries. Presentations will focus on the actual uses of the CBMS for national/local planning, program impact assessment, and poverty analysis in the context of recent development initiatives such as the MDGs.

Meanwhile, in support of the advocacy initiatives of CBMS partners, key policymakers and stakeholders from developing countries will also be invited to participate in this year's PEP conference. The focus of the discussion will be on how CBMS has been used or applied at the national and local levels, and on the prospects for scaling up the implementation and institutionalization of CBMS in countries where the system has been developed.

The conference-workshop is being organized by the Angelo King Institute for Economic and Business Studies of De La Salle University-Manila (AKI-DLSU Manila) in cooperation with the Centre Interuniversitaire sur le Risque, les Politiques Économiques et l'Emploi (CIRPÉE, Université Laval) and the Group for Analysis of Development (GRADE) based in Peru.

For updates on the conference, visit the Sixth PEP General Meeting section of the PEP website at www.pep-net.org.

CBMS Network calls for new proposals

The CBMS Research Network is calling for proposals from institutions in developing countries, except for countries where CBMS is currently being implemented, i.e., Bangladesh, Benin, Burkina Faso, Cambodia, Ghana, India, Indonesia, Laos, Nepal, Pakistan, the Philippines, Senegal, Sri Lanka and Viet Nam, for the development and institutionalization of a community-based monitoring system in their own countries. Each grant is intended to cover the design and the pilot of the CBMS in the respective countries. Aside from the financial support, grantees are given opportunities to participate in the annual CBMS and PEP network training workshops and conferences and are also given access to the CBMS network database as well as technical support from the network's pool of technical advisors.

Institutions that intend to avail of the grant should submit a research proposal to the CBMS Network Coordinating Team for initial screening. CBMS network proposals are categorized into two: (1) development and pilot test of a CBMS, and (2) expansion and institutionalization of a CBMS.

Proposals may be submitted to the CBMS Network Coordinating Team in the following emails: mimap@dls-csb.edu.ph and reyesc@dls-csb.edu.ph.

For more details on the guidelines for the submission of proposal, visit the CBMS section at the PEP website at www.pep-net.org.

CBMS activities in full swing

The CBMS implementation in Tanzania is only 8 months old but many activities have already been accomplished in such a short period of time. During this period, the following activities were undertaken:

Preparatory activities

The project team networked with the key persons and organizations that were identified to be involved in the project. The objective was to inform them about the project activities and the role that they were expected to play.

After the consultations with various stakeholders, instruments were developed, pre-tested and revised in consultation with the community leaders. Manual and computerized processing systems have also been developed.

In terms of training, four trainers, who conducted training for enumerators, were trained on data collection and six trainers were trained on data processing. In processing the data, two trainings were conducted: manual data processing training at the village and ward level, and computerized data processing at the municipal level.

Conduct of the surveys

Data collection was done with the use of two instruments: the household questionnaire and official (village/ward level) questionnaires. A total of 24 enumerators conducted the interviews with direct assistance from the community leaders and with supervision from the CBMS team. About 5,000 households were interviewed (2423 in K/Ndege ward and 2478 in Nala village).

The official (village/ward) questionnaires were also completed by leaders under the supervision of the project team members.

Consolidation and processing of data

All the 5,000 completed questionnaires were checked and verified by 20 leaders from each area. After data verification, the enumerators for each area performed manual data entry and tallying.

Analysis of the survey results

The most challenging effort in the whole exercise dealt with the determination of the poverty line for each community and the proportion of poor households in the study areas. This was done on the basis of consumption expenditure per capita, in line with the adopted national definition. However, based on the preliminary results, the poverty line that was adopted was that of 1,400 Tanzanian shillings (that is USD 0.78) per day per person in close alignment with the national poverty line. This was made after consultations with the enumerators, and community and council leaders. The main argument here is that the intent of the CBMS exercise is not only to estimate poverty at one point in time but also to measure poverty over time.

The Opportunities and Obstacles to Development (O&OD) approach was also used to get information and general views from the villagers that could complement the household data. This was conducted during the council meeting through voting and ranking.

Validation of results

The results were validated in K/Ndege and Nala through two local workshops. Some leaders from other surrounding villages were also invited in an effort to raise the overall awareness regarding the CBMS exercise and its results. All of them expressed an interest in developing and adopting the CBMS in their respective areas.

Upcoming activities

For the coming months, the CBMS Team will likewise be busy with the conduct of the following activities.

1. Finalization of the analysis and finetuning of the results.
2. Production of poverty maps, spot maps and profiles of study area.
3. Preparation of development plans of the pilot areas.
4. Presentation of the project results to the stakeholders at the local, council/regional and national levels.
5. Finalization of the Technical Report. *

Participants in the CBMS introduction meeting with trainors and ward leaders in K/Ndege, one of the CBMS pilot sites.

* The article is an excerpt from a report prepared by the CBMS-Tanzania Project Team. CBMS work in Tanzania is being carried out through the Dodoma Municipal Council.

More trainings for increasing number of local partners

Local officials and participants from Zambaonga del Sur (topmost photo), Agusan del Norte (middle) and EB Magalona and Escalante City (bottom) came in full force to show support for the conduct of CBMS trainings in their localities.

A number of trainings were conducted by CBMS trainors for its increasing number of local partners.

Agusan del Norte and Zamboanga del Sur

CBMS trainors from the National Anti-Poverty Commission (NAPC) conducted their first of a series of capability-building activities with the conduct of training on CBMS Module 1 (Data Collection) at NAPC's pilot provinces. The first training, which was for trainors from the province of Zamboanga del Sur, was held on February 8-9, 2007, with more than 60 participants from the 26 municipalities and 1 city of the province and staff from the provincial government. The second training, meanwhile, was held on February 21-23, 2007 for trainors from Agusan del Norte. More than 40 participants from the 11 municipalities of the province, staff from the offices of the provincial government and representative from the

< 8

CBMS Team conducts training in Lesotho, South Africa

Upon the invitation of the Lesotho Council of Non-Government Organizations (LCN), the CBMS Team conducted a CBMS methodology workshop on March 12-16, 2007in Lesotho, South Africa. Dr. Celia M. Reyes and Ms. Jasminda A. Quilitis of the CBMS Network Coordinating Team facilitated the workshop.

The activity was organized by the LCN, headed by its Executive Director, Mr. Seabata Motsamai. LCN is the umbrella organization of organized NGOs in Lesotho. It provides support services to the NGO community through networking, leadership training and development, information dissemination, capacity building, coordination, advocacy and representation when dealing with the government and the international community.

There were 30 participants including LCN staff, representatives from different NGOs under the LCN umbrella such as Blue Cross Resource Centre, Anti Drug Abuse Association of Lesotho, NGO Coalition on the rights of the Child, Lesotho National Federation of the Disabled, Lesotho Young Christian Students, Highlands Church Action Group, Lesotho Durham Link, Patriot Vision In Action, Development For Peace Education, Rural Self Help Development Association, Monna Ka Khomo, Federation of Women Lawyers, Young Women Christian Association, Centre for Empowerment and Social Analysis, Thaba Bosiu Centre, Lesotho Youth Federation and Bureau of Statistics.

Toward the last part of the workshop, there was a planning session for the

< 8

News Updates-Philippines

More trainings...from page 7

regional office of the DILG, attended the training.

These capability-building activities for CBMS trainors from NAPC were in line with the aim of the NAPC to eventually be able to effect an improved poverty monitoring at the local and national levels. This is also in preparation for further scaling up of the CBMS in the Philippines.

CBMS-GRB pilot sites

Several weeks after validating their CBMS data and conducting focus group discussions (FGDs) designed to inform the planning and budgeting processes at the local level, the pilot local government units of the CBMS-Gender Responsive Budgeting (CBMS-GRB) Project conducted their training on crafting their gender-responsive plans and budgets on March 19-23, 2007 at the Provincial Capitol in Bacolod City. The training was facilitated by Dr. Aniceto Orbeta, Jr. of the Philippine Institute for Development Studies; the CBMS Network Coordinating Team; and the DAWN Foundation.

More than 40 participants from the municipality of EB Magalona and the city of Escalante, both CBMS-GRB pilot sites, attended the training.

The training is one of the culminating activities under the CBMS-GRB Project which aims to develop and pilot-test an enhanced CBMS that facilitates gender-responsive budgeting.

CBMS Team conducts ...from page 7

next steps of activities wherein the participants created a working group tasked to map out the work program to be able to pilot test the CBMS in at least 2 villages in Lesotho.

LCN envisions using CBMS in monitoring Lesotho's Poverty Reduction Strategy (PRS) and Millennium Development Goals (MDG), and planning and assessing existing and proposed development programs, among others.

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